

Message Text

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ACTION EB-07

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TO SECSTATE WASH DC 5920

C O N F I D E N T I A L SECTION 01 OF 03 OECD PARIS 06415

EXCON

E.O. 11652: XGDS1

TAGS: ESTC, COCOM

SUBJECT: COCOM LIST REVIEW: I/L 1362 - VIBRATION TEST
EQUIPMENT

REFS: A. STATE 45798

B. COCOM DOC REV (74) 1362/1

C. COCOM DOC REV (74) 1362/2 AND CORRIGENDUM

D. OECD PARIS 25593, 10/30/74

SUMMARY: UK ADAMANTLY PRESSED US ON REASONS WHY US HAD BEEN UNABLE TO REACH A CONCLUSION BASED ON INFORMATION ALREADY PROVIDED. THEY FELT THAT THEY HAD GIVEN ADEQUATE AND THOROUGH JUSTIFICATION FOR DELETION DURING ROUND I. WHEN QUESTIONED BY UK, GERMANS GAVE THEIR CONTINUED SUPPORT TO DELETION BUT HAD SUBMITTED COUNTERPROPOSAL MERELY AS COMPROMISE. US EXPRESSED FAVOR TO GERMAN APPROACH AND PRESSED FOR DISCUSSION BUT GERMANS WERE RELUCTANT IN VIEW OF PREFERENCE FOR DELETION. US ASKED FOR INFORMAL TWG IN ORDER TO SEE IF THEIR FORMULATION OF A NEW DEFINITION WOULD BE IN LINE WITH THOUGHTS OF OTHER DELEGATIONS. UK COULD SEE NO CAUSE FOR TWG, BECAUSE EXPERTS PRESENT WERE FAVORING DELETION. CHAIRMAN POLLED DELEGATIONS ON TWG. GENERAL AGREEMENT WAS REACHED AND INFORMAL TWG WAS CALLED. ALL DELEGATIONS, EXCEPT US, CONTINUED TO FULLY SUPPORT UK
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ON DELETION.

ACTION REQUESTED: USING 1971 UK PROPOSAL AS A GUIDE, TTG SHOULD BE CONVENED TO DRAFT US COUNTERPROPOSAL FOR ROUND III. SPECIAL NOTE SHOULD BE MADE OF CO-COM CRITERIA, UK JUSTIFICATION FOR DELETION IN REF B, AND INFORMAL TWG DISCUSSION. END SUMMARY

1. ON 10 MARCH US OPENED DISCUSSION STATING THAT THEY STILL DID NOT BELIEVE DELETION OF 1362 WAS THE SOLUTION. THE UK ASKED GERMANY IF THEY MAINTAIN SUPPORT FOR DELETION. GERMAN DELEGATION GAVE THEIR CONTINUED SUPPORT TO UK PROPOSAL AND STATED THAT THEIR COUNTERPROPOSAL WAS SUBMITTED AS A COMPROMISE. UK ASKED WHY US WAS STILL UNABLE TO ACCEPT DELETION. US REPLIED THAT 1362 REMAINED AN IMPORTANT ITEM FOR CONTROL. THEY WERE WILLING TO SEE A MORE REFINED DEFINITION, BUT DELETION GOES TOO FAR.

2. UK SAID US STATEMENTS WERE INADEQUATE. UKDEL THEN REPEATED JUSTIFICATION STATEMENTS FROM REF B, ASKING THAT US PROVIDE ANSWERS TO THESE POINTS. US STATED THAT THEY WERE STILL STUDYING THE SITUATION AND WERE TRYING TO PREPARE A COUNTERPROPOSAL THAT WOULD SATISFY THE CONDITIONS. UK HAD EXPECTED US TO EVALUATE THEIR STATEMENTS BETWEEN ROUNDS AND WAS NOW PRESSING FOR ANSWERS. US RESPONDED THAT THEY HAD TAKEN THE UK POINTS SERIOUSLY AND HAD SEVERAL EXPERTS FROM VARIOUS AGENCIES STUDYING THESE POINTS. THE COMPLEXITY OF THE ITEM PREVENTED THE COMPLETION OF THE STUDY BEFORE ROUND II. US DID NOT DISPUTE ENTIRELY THE UK STATEMENTS REGARDING BLOC CAPABILITIES IN VIBRATOR TECHNOLOGY AND THE USE OF PHASING DEVICES FOR COUPLING VIBRATORS. THEY DID, HOWEVER, NOTE THAT COUPLING DID NOT ALWAYS RESULT IN A SATISFACTORY HIGH THRUST SYSTEM. THE UK EXPERT (SEMARK OF DERRITRON) COUNTERED THAT THE USE OF PHASING DEVICES WAS A STANDARD TECHNIQUE TO ACHIEVE HIGHER THRUST OUTPUTS. UK AND US BOTH PRODUCED SUCH EQUIPMENT. THERE WERE NO TECHNICAL PROBLEMS IN CONTROLLING FOUR 9000-LB. THRUST UNITS TO PROVIDE 36,000 LB. TOTAL THRUST.

3. FRANCE CONTINUED TO FAVOR UK PROPOSAL, RECOGNIZING CONFIDENTIAL

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THE COMPLEXITY OF EVALUATING THE PROBLEMS. THEY THOUGHT IT MIGHT BE USEFUL TO FIND THE POINTS OF AGREEMENT AMONG DELEGATIONS WITH RESPECT TO THE UK POINTS. THEY ASKED IF LOW FREQUENCY GENERATORS, LOW FREQUENCY AMPLIFIERS, AND LOW FREQUENCY SENSORS POSED ANY SPECIAL TECHNOLOGY PROBLEMS. US SAID THEY WOULD REFER THIS QUESTION TO THEIR AUTHORITIES.

4. NETHERLANDS CONTINUED STRONG SUPPORT FOR UK DELE-

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C O N F I D E N T I A L SECTION 02 OF 03 OECD PARIS 06415

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TION. THIS ITEM REPRESENTS GENERAL PURPOSE EQUIPMENT
PRIMARILY USED FOR CIVIL APPLICATIONS. THE DIFFICULTY
IN SORTING OUT THE STRATEGIC USES REINFORCES THE CIVIL
USAGE ASPECTS.

5. UK ASKED US TO RESPOND TO PHASING DEVICE STATEMENT
OF THEIR EXPERT. US ANSWERED THAT WHEN MORE THAN A CER-
TAIN NUMBER OF VIBRATORS ARE COUPLED, THE SYSTEM BECOMES
COSTLY AND UNWIELDY IN SIZE. THERE ARE CERTAIN OTHER
PROBLEMS THAT OCCUR WHICH CAN LEAD TO FALSE DATA. US
PLANS TO DEAL WITH A SYSTEMS CONCEPT IN ITS COUNTERPRO-
POSAL AND WOULD LIKE TO HEAR MORE ON THE GERMAN PROPOSAL.

6. THE UK WAS ALSO INTERESTED IN HEARING THE GERMAN
PROPOSAL. THE UK EXPERT PROVIDED MORE COMMENTS ON PHAS-
ING VIBRATORS TO GAIN HIGHER THRUSTS. HE STATED THAT
ANY NUMBER COULD BE USED IN COMBINATION. THE MAIN LIM-
ITATION IS ECONOMIC.

7. THE UK WISHED TO HAVE SOME IDEA AS TO THE DIRECTION
OF THE US COUNTERPROPOSAL, MAKING REFERENCE TO THEIR
1971 LIST REVIEW PROPOSAL. THE US COMMENTED, OFF THE RE-
CORD, THAT THEY WERE CONTEMPLATING SEVERAL ROUTES BUT

HAD NOT FIRMLY ESTABLISHED ANY PARAMETERS. THEY HAD THOUGHT ABOUT THE ITEM DEFINING BOTH SHOCK AND VIBRATION TEST EQUIPMENT. PARAMETRIC STARTING POINTS INCLUDED-
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ED IMPACT, FREQUENCY, DISTORTION, PULSED MODE, AND NOISE FUNCTIONS. THEY WERE ALSO LOOKING AT THE STRUCTURE OF THE 1971 UK PROPOSAL. FRANCE APPEARED TO BE CONCERNED ABOUT THE INTRODUCTION OF SHOCK PARAMETERS, SINCE SHOCK WAS SOMETHING NEW TO THIS ITEM. THEY ASKED IF SOME OF THE THINGS MENTIONED REFERRED TO BANDWIDTH FUNCTIONS AND SIGNAL TO NOISE RATIOS OR WHAT, AND WHAT WAS US BASIS FOR FAVORING GERMAN COUNTERPROPOSAL. GERMANY WISHED TO HOLD BACK THEIR COUNTERPROPOSAL UNTIL THEY COULD SEE A US COUNTERPROPOSAL. THIS ROUND MIGHT BE TOO EARLY FOR DISCUSSION OF THEIRS. THEY EMPHASIZED E CONTINUED STRONG SUPPORT FOR DELETION. ITALY AND CANADA DID NOT FEEL THE GERMAN COUNTERPROPOSAL COULD BE DISCUSSED WITHOUT SOMETHING FROM US AND CONTINUED STRONG SUPPORT FOR DELETION. JAPAN ALSO SUPPORTED FULLY THE UK DELETION.

8. US PRESSED FOR DISCUSSION OF GERMAN COUNTERPROPOSAL IN ORDER TO HEAR VIEWS OF OTHER DELEGATIONS. ALTHOUGH OPPOSED TO DELETION, US DID NOT WANT TO CLOSE DISCUSSION, BECAUSE IT WOULD BE USEFUL TO HEAR OTHER OPINIONS; IF NOT IN COMMITTEE, INFORMAL TWG WOULD BE USEFUL. UK NOTED THAT EXPERTS WERE FAVORING DELETION, SO WHAT WOULD BE ACCOMPLISHED TO TWG? NEVERTHELESS, THEY WOULD PREFER KEEPING THE DOOR OPEN SO THEY COULD GO ALONG WITH TWG. GERMANY PREFERRED DISCUSSING THEIR COUNTERPROPOSAL IN TWG. NETHERLANDS BELIEVED INFORMAL TWG WOULD BE USEFUL IN SHOWING HOW DIFFICULT IT IS TO DRAFT A GOOD STRATEGIC DEFINITION FROM A GENERAL PURPOSE CIVILIAN AREA OF EQUIPMENT. THE ITEM REMAINS OPEN.

9. FOLLOWING IS REPORT OF INFORMAL TWG AT WHICH US, UK, GERMAN, FRENCH, AND JAPANESE DELEGATIONS WERE REPRESENTED.

A. ON MARCH 10, AN INFORMAL TWG MET TO DISCUSS THE TECHNICAL DIFFICULTIES OF REDEFINING IL-1362, VIBRATION TEST EQUIPMENT. TO STIMULATE DISCUSSION THE US EXPERT REFERRED TO EARLIER UK STATEMENTS CONCERNING THE PHASING OF SEVERAL VIBRATORS IN SERIES TO TEST LARGE LOADS. HE NOTED THAT IN US EXPERIENCE, THE PHASING OF VIBRATORS GIVES RISE TO IMPEDANCE COUPLING, DAMPING,
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DISTORTION AND OTHER PROBLEMS. HE SUGGESTED THAT PERHAPS SHOCK AS WELL AS VIBRATION TESTING CAPABILITY SHOULD BE DEFINED. THE GERMAN EXPERT EXPLAINED THAT HIS PROPOSAL WAS BASED ON FINDINGS THAT CIVIL TESTING EQUIPMENT IS CHARACTERIZED BY LINEAR READOUT WHICH DISTORTS AT CERTAIN FREQUENCIES AND WHEN THE TEST RESULTS ARE CURVILINEAR. (MILITARY SYSTEMS REQUIRE NON LINEAR CAPABILITY.) THE UK EXPERT CAUTIONED THAT THERE IS NO DISTORTION IN A VIBRATOR IN UNLOADED CONDITION, SO THAT IF A DISTORTION WERE SELECTED AS THE GERMAN PROPOSAL SUGGESTS, IT WOULD HAVE TO BE MEASURED UNDER LOAD. TESTING UNDER LOAD WOULD LEAD TO THE PARADOX THAT THE DISTORTION WOULD BE A FUNCTION OF THE LOAD ITSELF RATHER THAN THE VIBRATOR WHICH PRODUCES NO DISTORTION. MANUFACTURERS COULD THEN HAVE NO WAY OF PREDICTING DISTORTION WITHOUT KNOWING WHAT SPECIFIC KINDS OF LOADS WOULD BE TESTED.

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B. THE FRENCH EXPERT OBSERVED THAT SHOCK TESTING WHICH HAD JUST BEEN MENTIONED FOR THE FIRST TIME IN THE COMMITTEE, SHOULD BE EXAMINED BECAUSE DISPERSION OCCURS IN THE COIL AT HIGH FREQUENCIES. IN HIS VIEW, IF THE RISE TIME IS SUFFICIENT FOR MILITARY TESTING THEN THE BANDWIDTH OF THE EQUIPMENT MIGHT BE IMPORTANT TO LOOK AT.

THE NETHERLANDS STATED THAT HE HAD BEEN LED TO BELIEVE THAT DISTORTION HAS NO EFFECT ON THE ACCURACY OF THE EQUIPMENT. HE WONDERED WHETHER HIGH FREQUENCY, LOW POWER VTE IS MORE SIGNIFICANT THAN LOW FREQUENCY, HIGH POWER VTE, AND IF SO, REDEFINITION MIGHT CENTER ON THE FORMER.

THE UK EXPERT RESPONDED TO THE FRENCH OBSERVATION BY STATING THAT ELECTROMAGNETIC EQUIPMENT (THAT UNDER EMBARGO) IS POOR FOR SHOCK TESTING. HE EXPLAINED THAT THE NETHERLANDS EXPERT'S REMARKS WOULD ONLY BE VALID UNDER BARE TABLE (NO LOAD) CONDITIONS. HOWEVER, SINCE TESTING BEGINS AS SOON AS THE TEST OBJECT IS PUT ON THE TABLE, FREQUENCY AND POWER CONSIDERATIONS POSE THE DILEMMA OF RELATING BACK TO THRUST. IN HIS VIEW THE ONLY RELATION BETWEEN ACCELERATION AND FREQUENCY IS AXIAL THRUST. DISTORTION IS NOT CONTROLLABLE BECAUSE IT COMES LATER WITH THE USE OF THE MACHINE AND IS NOT INHERENT IN IT.

C. THE BRITISH AND FRENCH EXPERTS CONCLUDED THE BRIEF
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INFORMAL MEETING BY NOTING THAT THE DEFINITION OF VTE HAS NOT CHANGED IN 14 YEARS ALTHOUGH BOTH THE SOVIETS AND CHINESE MAKE EMBARGO LEVEL EQUIPMENT. ELECTROMECHANICAL AND ELECTROMAGNETIC TESTING IS NOT THE WAY TO TEST MILITARY AND STRATEGIC EQUIPMENT BECAUSE HIGH-INTENSITY NOISE TESTING PROVIDES A CLOSER ANALOGY TO REAL CONDITIONS. HIGH-INTENSITY NOISE EQUIPMENT IS ORDERED AND USED ONLY BY MILITARY CUSTOMERS. HE PRODUCED A PHOTOGRAPH OF A US SATURN MISSILE BEING TESTED WITH SUCH EQUIPMENT. GAMET POINTED OUT THAT COLUMN-OF-AIR-TRANSDUCER COUPLING USING ELECTRONIC CONTROLS IS THE ONLY METHOD SIGNIFICANT IN AEROSPACE VIBRATION TESTING AND HE KNEW PERSONALLY THAT GRUMMAN AIRCRAFT USED IT FOR MISSILES. HE ALSO POINTED OUT THAT NOISE EQUIPMENT HAS NEVER BEEN EMBARGOED. THEY ASKED THAT THE US PUT ASIDE THE RESIDUE OF PAST FOURTEEN YEARS AND EXAMINE WHAT IS IMPORTANT TODAY. THE UK EXPERT THOUGHT A SIMPLE DEFINITION FOR HIGH-INTENSITY NOISE EQUIPMENT USING SOUND PRESSURE AND BANDWIDTH PARAMETERS WOULD BE THE BEST. IF THERE WERE CONCERN ABOUT PRESENT VTE TECHNOLOGY, HE THOUGHT AN APPROACH MIGHT BE WORKABLE.
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